FIG. 1

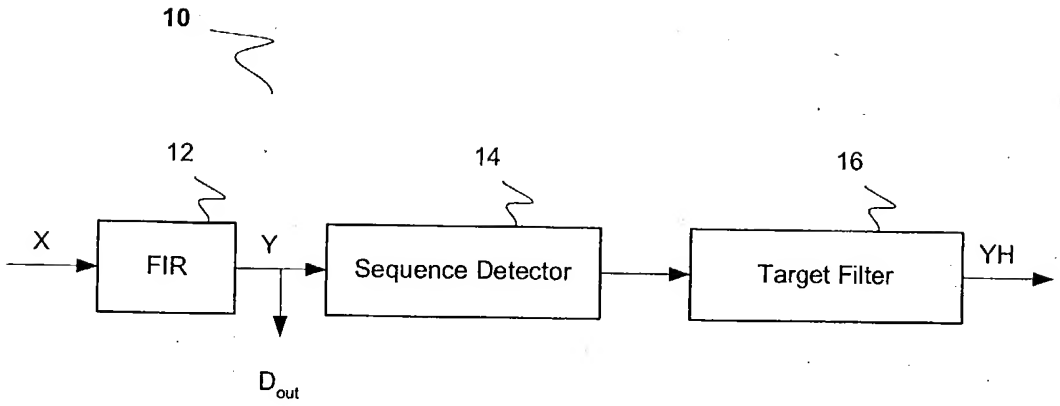


FIG. 2

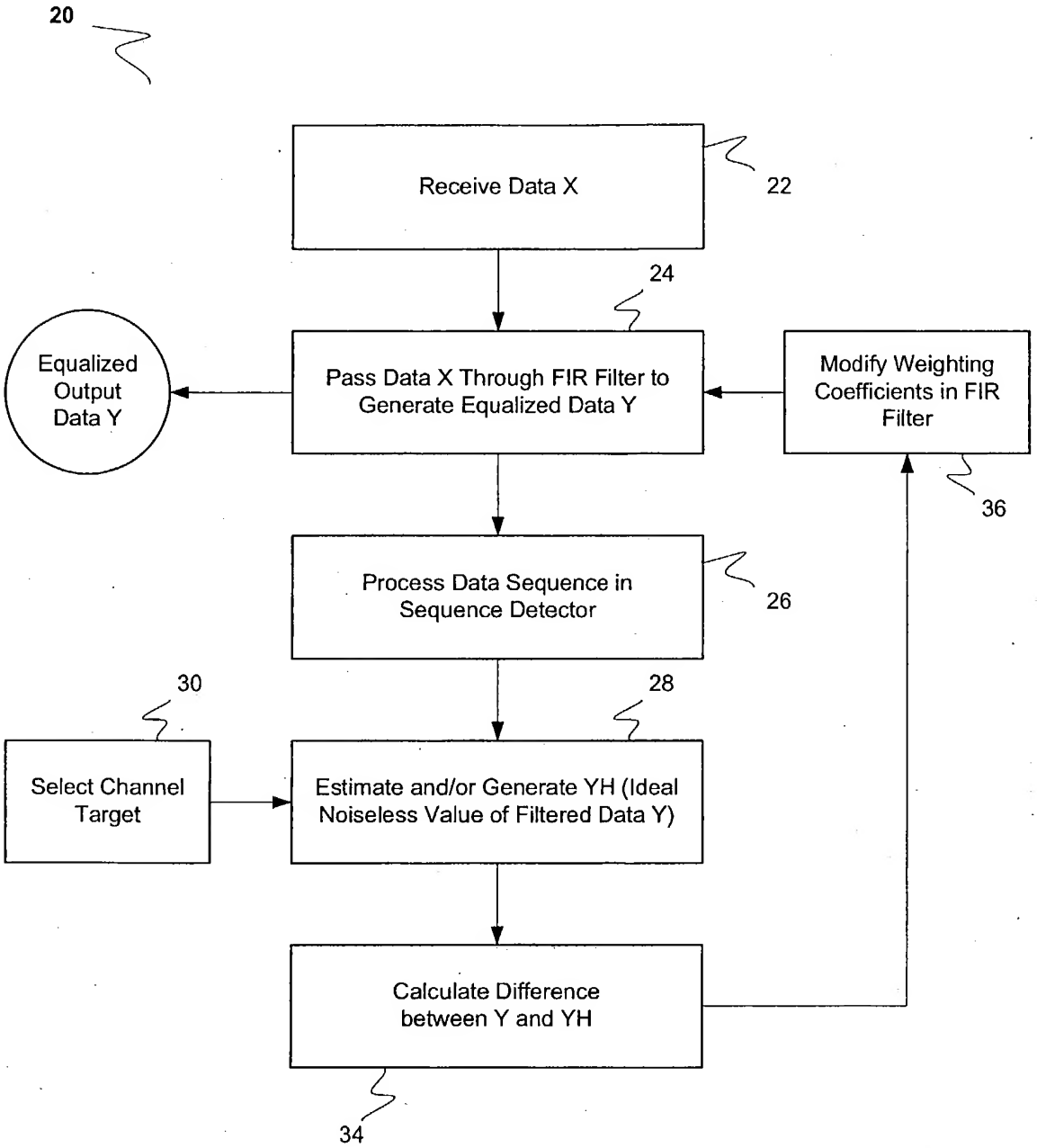

20
Receive Data X
22
24
Equalized Output Data Y
Pass Data X Through FIR Filter to Generate Equalized Data Y
Modify Weighting Coefficients in FIR Filter
36
Process Data Sequence in Sequence Detector
26
30
28
Select Channel Target
Estimate and/or Generate YH (Ideal Noiseless Value of Filtered Data Y)
Calculate Difference between Y and YH
34

FIG. 3

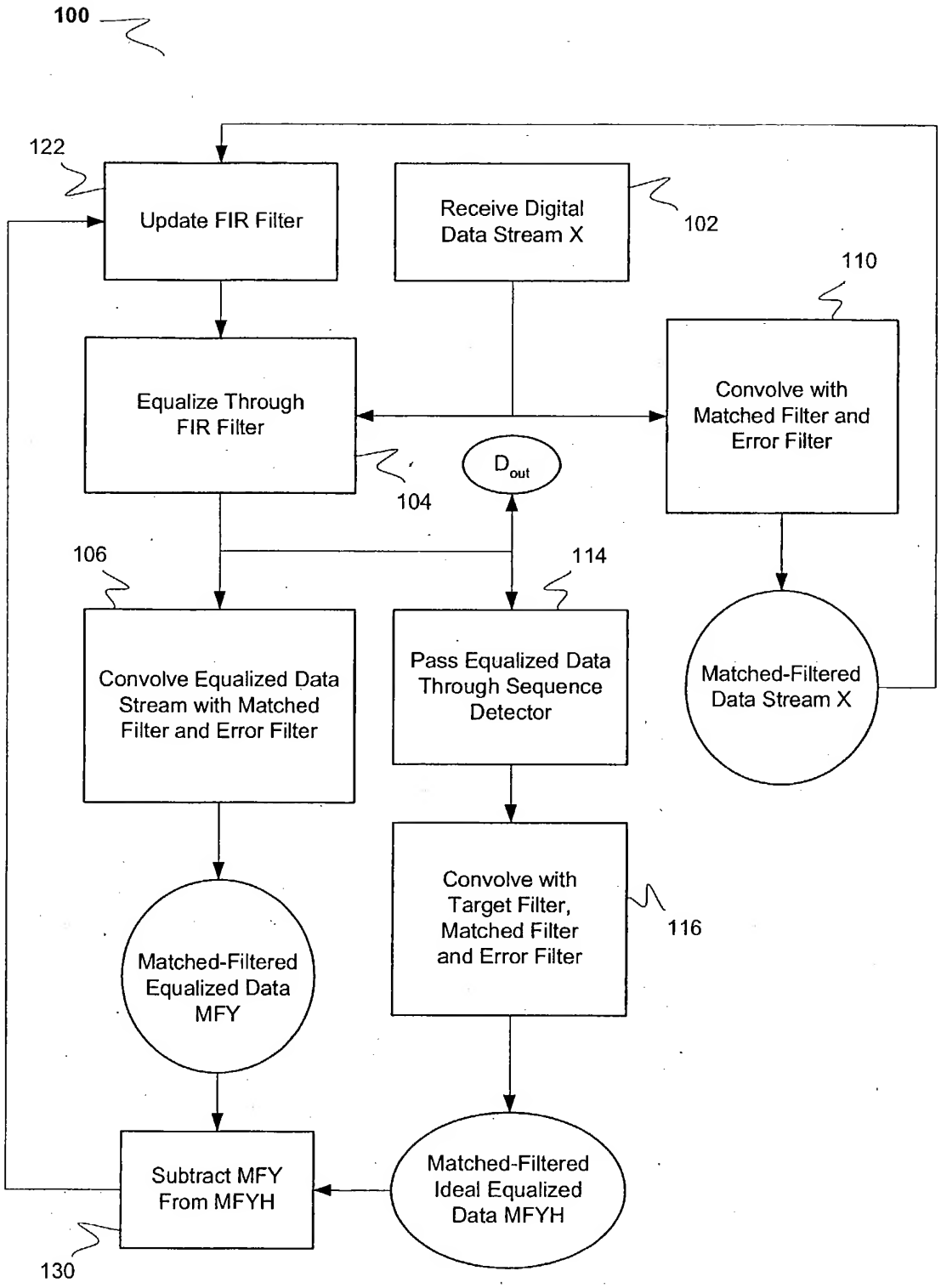

100
122
Update FIR Filter
Receive Digital Data Stream X
102
110
Equalize Through FIR Filter
Convolve with Matched Filter and Error Filter
$D_{out}$
104
106
114
Convolve Equalized Data Stream with Matched Filter and Error Filter
Pass Equalized Data Through Sequence Detector
Matched-Filtered Data Stream X
Matched-Filtered Equalized Data MFY
Convolve with Target Filter, Matched Filter and Error Filter
116
Subtract MFY From MFYH
Matched-Filtered Ideal Equalized Data MFYH
130

FIG. 4A

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| S | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| S_exp | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| error | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

FIG. 4B

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| S | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| S_exp | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 |
| error | 0 | 0 | 0 | -1 | 0 | 0 | 0 | 0 |

FIG. 5

| | | |
|---|---|---|
| S | 0 1 | 1 0 |
| S_exp | 1 0 | 0 1 |
| error | -1 1 | 1 -1 |

FIG. 6

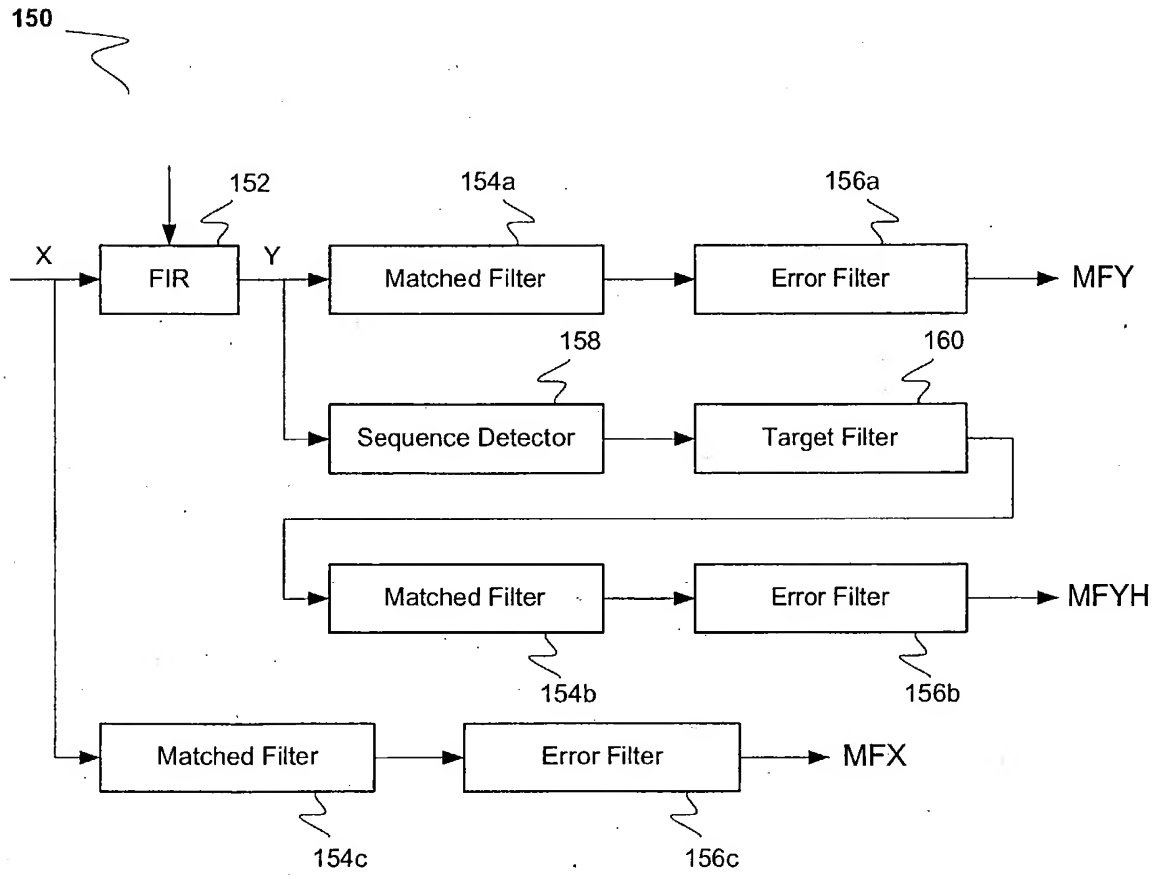

150
152
154a
156a
X
FIR
Y
Matched Filter
Error Filter
MFY
158
160
Sequence Detector
Target Filter
Matched Filter
Error Filter
MFYH
154b
156b
Matched Filter
Error Filter
MFX
154c
156c

FIG. 7

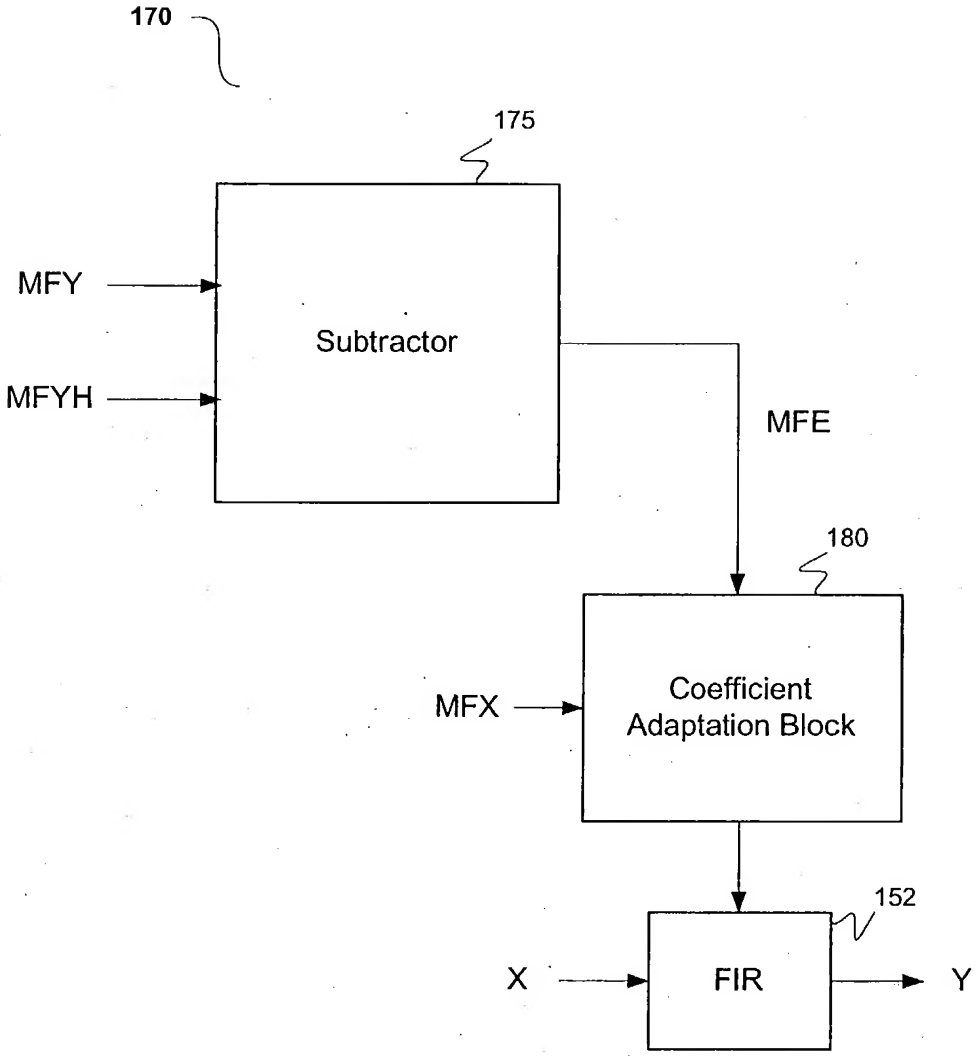
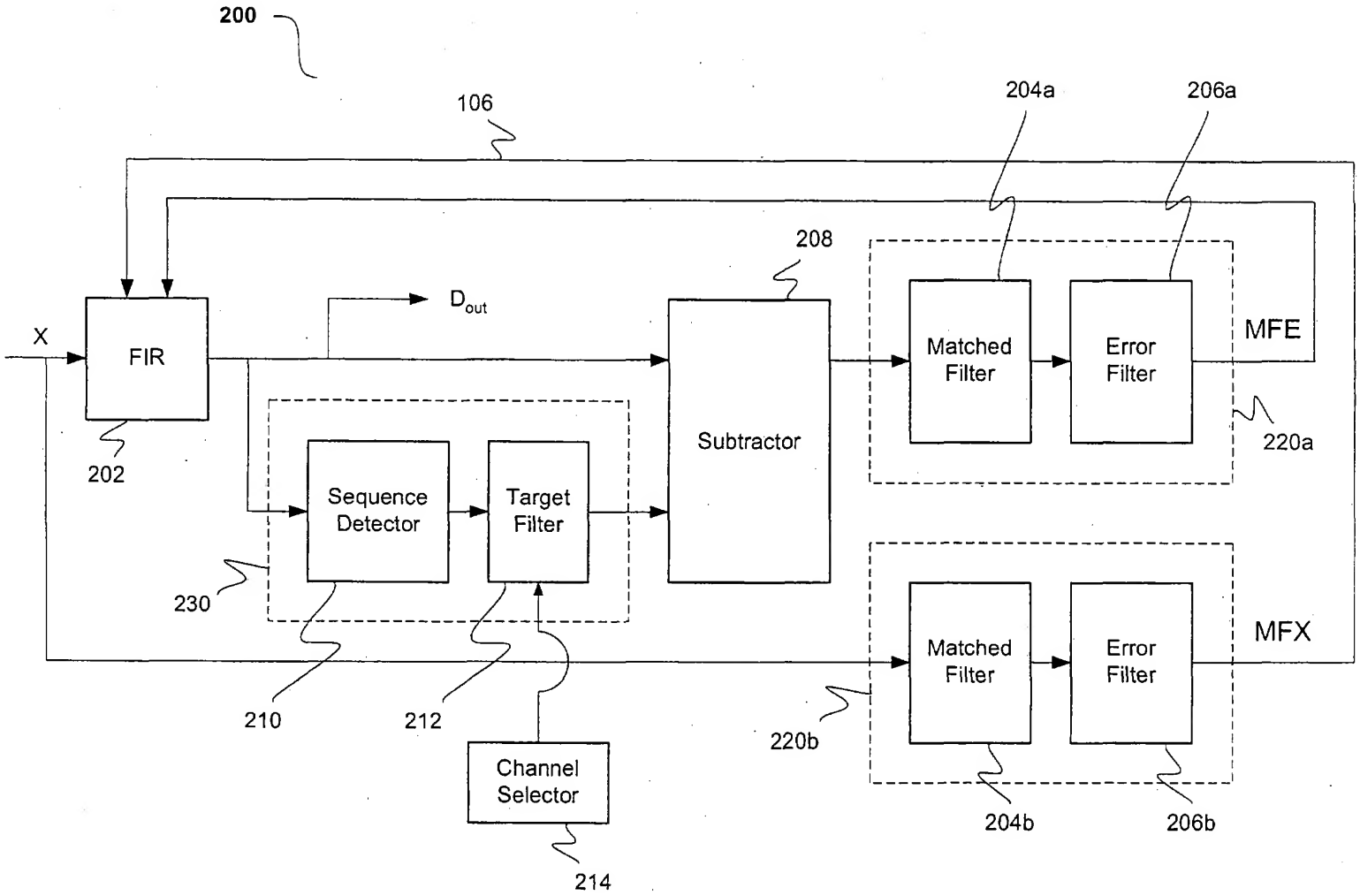

170
175
MFY
MFYH
Subtractor
MFE
180
MFX
Coefficient
Adaptation Block
152
X
FIR
Y

FIG. 8


200
106
204a
206a
208
$D_{out}$
X
FIR
202
Sequence Detector
Target Filter
230
Subtractor
Matched Filter
Error Filter
MFE
220a
210
212
Channel Selector
214
Matched Filter
Error Filter
MFX
220b
204b
206b